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MILITARY CRITERIA FOR NATO TNF OPTIONS FOR THE 1980S  
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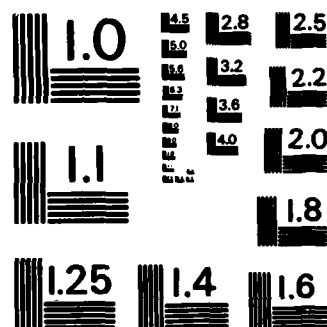
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Carl H. Builder

May 1982

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## MILITARY CRITERIA FOR NATO TNF

### OPTIONS FOR THE 1980s\*

Carl H. Builder

#### I. INTRODUCTION

What is it that we want and can reasonably expect NATO's theater nuclear forces (TNF) to do in the decade ahead? If NATO could start from scratch, what would a sensible nuclear force posture look like? These are the questions I have been asked to address here--thankfully not with the intent of providing a comprehensive or definitive treatment, but with the purpose of stimulating your discussion.

I welcome the invitation to start from scratch. A clean piece of paper allows me, at least momentarily, to sweep aside all of the complex details and to replace them with simpler symbols that I can more easily juggle within my mind. Those simple symbols are never completely satisfying--some aspects of the problem always escape. But often enough, those symbols or abstractions capture some feature or relationship in the problem that I've missed before.

To launch, perhaps even frame, our discussion about options for the 1980s, I would like to talk about criteria for NATO TNF in symbolic or abstract terms--using simple ideas about objectives, nations, and forces--which may do some violence to the complexities and subtleties of the problem, but which should map the subject for discussion.

#### II. FOUR SIMPLE IDEAS

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My analysis depends upon four simple ideas or assumptions. Each idea is an attempt to distinguish or discriminate between what is believed to be importantly different things. They are attempts to separate the problem into pieces of differing characteristics and, hence, different solutions. *These ideas are:*

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\* This paper was originally prepared for the SIXTH CONFERENCE ON NEW APPROACHES TO ARMS CONTROL, sponsored by The International Institute for Strategic Studies, and held at the Barnett Hill Conference Center in Sussex, England, during 5-7 May 1982. A companion paper on issues for the current force posture was prepared by Jim Thomson of Rand.

## 1.→ Distinguishing Between NATO And Its Members;

The first simple idea that I want to introduce is the observation that NATO itself is an idea. NATO's idea is an alliance of nations for a common purpose; but that doesn't mean that all of those nations share all of their purposes. And since nuclear weapons can serve or detract from several purposes--not all of which fall under the purpose of the Alliance--it should be no surprise that the criteria for NATO TNF are complex. Nor should it be a surprise that NATO doesn't have any TNF. The nations which have allied themselves under NATO as an idea have TNFs which they have more or less shared for the common purpose of the Alliance, but not for their separate purposes as nations.

That first simple idea suggests that we should not try to discuss NATO TNF except as the most favorable amalgamation of national TNFs under the common purpose of the Alliance. And that, in turn, suggests we should begin with the separate national interests in nuclear weapons.

## 2.→ Distinguishing Between Nations ;

But to discuss each of the nations that comprise the NATO Alliance is, at once, a hopeless mass of detail. Hence, a second simplifying idea: We can broadly categorize the NATO nations insofar as their logical interests in nuclear weapons. This will allow us to use a few symbols in the place of lists of nations; and--if in the process of categorizing--we smooth off some of the fuzzy details, so much the better for my purpose here. I propose the following categories or symbols:

- o LOCATION (with respect to the theater)
  - FRONTIER (buffer or border states)
  - INTERIOR
  - OVERSEAS
- o DISPOSITION (with respect to nuclear weapons)
  - ABSTAINER (explicit refusal)
  - HOST
  - ARMED (independent possession)

These categories give us nine combinations in which to group nations. Two of those nine possibilities are currently empty: None of the frontier states are nuclear armed (perhaps not surprisingly) and none of the overseas members of the Alliance are hosts for nuclear weapons. But all of the other seven combinations represent one or more of the NATO nations. While there might be some argument about where to put a few nations in this scheme,\* those differences or uncertainties are not central to the logic I want to pursue here.

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\* For example, is Denmark a frontier or interior state?

Having categorized the NATO nations thusly, do we expect any changes during the decade ahead? Certainly their locations shouldn't change, unless there is some upheaval that moves the demarcation between East and West or significantly changes the membership of NATO. Do we aspire to change the disposition of the NATO nations toward or against nuclear weapons? While there might be some changes on the margin, between the abstainers and the hosts, the categories are likely to remain intact and relevant over the next decade. Thus, the seven occupied categories are probably constant symbols for the NATO nations for the foreseeable future.

### 3.) Distinguishing Between National Interests ; AND

How do these symbolic groups of nations see their own interests affected by theater nuclear weapons? Here we need to introduce a third simplifying idea to represent national interests--which are, of course, very complex and idiosyncratic. With some trepidation, I will propose that the national interests affected by nuclear weapons can be resolved into three basic objectives:

- o SURVIVAL of the society, its population, property, and institutions;
- o SOVEREIGNTY of the nation, its government, people, and commerce; and
- o WELL-BEING of the people, in terms of their prosperity, health, and security.\*

If there is a better way to characterize national interests, I would invite substitution of that alternative for mine. My purpose is not to arbitrate the distinctions in national interests, but to press for recognition of some distinctions: All national interests are not equally vital and it is important that we do not blur their differences. My preference for the objectives listed above is that they provide a hierarchy of interests: Survival is more vital than sovereignty; sovereignty is more vital than well-being, at least for most nations.

Now, with these symbols in place, what national interests are at stake for which groups of nations when faced with the classic or canonical NATO threat? If there were a Pact invasion of Europe, in the center or on the flanks (or both), which nations would be most concerned with what national interest at that point in time? That can tell us something about how they might see the role of nuclear weapons in helping them preserve their national interests.

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 \* I have used this formulation of national objectives elsewhere, so I am aware of the difficulties some will have with it. See Rand R-2598-AF, A CONCEPTUAL FRAMEWORK FOR A NATIONAL STRATEGY ON NUCLEAR ARMS, Carl H. Builder, September 1980.



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#### 4. Distinguishing Between Nuclear Forces. ←

But to discuss the role of nuclear weapons, I must first introduce the fourth and last simple idea: What are nuclear weapons really good for? I will assert that nuclear weapons have utility only in threats to use them; they have no utility in actual use. That may be too simple an idea for some; and it may be worth debating here or elsewhere; but I can draw no other conclusion. I will further assert that it applies equally to battlefield, theater, and strategic nuclear weapons--whether they be aimed at countermilitary, counterforce, or countervalue targets.

The important difference between these various nuclear weapons and their targets is not their utility for warfighting,\* but their relative credibility as threats. I will assert that the threat to use a battlefield nuclear weapon in response to a conventional attack is more credible than the threat to destroy the attacker's cities. The threat to use theater nuclear weapons is more credible as a response to the use of battlefield nuclear weapons. The threat to attack cities is more credible after there have been strategic nuclear attacks on military targets. And so on. Thus, it will be helpful to distinguish between several different threats (and capabilities) for the use of nuclear weapons according to their credibility (and implied provocation):

- o BATTLEFIELD (limited to the battle area)
- o THEATER (limited to the theater of conflict)
- o STRATEGIC (global)
  - Countermilitary (general military targets)
  - Counterforce (strategic offensive forces targets)
  - Countervalue (urban and industrial area targets)

With these distinctions, we can associate different roles--threats of differing credibility--for nuclear weapons with the various categories of nations, depending upon the national interests at stake. These are all of the symbols I need for this analysis of some logical TNF options for the future.

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 \* I do not believe that nuclear weapons have any utility in warfighting; but I do believe that there is utility in threatening to use nuclear weapons with warfighting capabilities. See my arguments in "Why Not First-Strike Counterforce Capabilities?" STRATEGIC REVIEW, Vol.VII, No.2, Spring 1979, pp.32-39.

### III. IMPLICATIONS FOR THE STATES

If we forget the abstainers, there are only four categories of states that must deal with nuclear forces:

- o The frontier host states, such as the FRG, Greece, and Turkey;
- o The interior host states, such as Italy, Belgium, and the Netherlands;
- o The interior armed states, such as Britain and France; and
- o The overseas armed states, which comprise only the U.S.

The national interests of those states are dictated more by their geographical positions than their disposition toward nuclear weapons.

#### 1. The Frontier States

For the frontier states, a conventional attack by the Pact is an immediate threat to their sovereignty, at the minimum. Moreover, a vigorous defense could turn their nation into a battlefield. For the densely developed frontier states, that prospect threatens their very survival as a society. For these states, deterring a Pact invasion or, failing that, negotiating some kind of early settlement is probably more attractive than fighting a destructive war (conventional or nuclear) on their territory--whether or not that war might be won in the rubble of their society.

Thus, the frontier states are confronted, even for a conventional war in Europe, with their most vital national interests--survival and sovereignty--immediately at risk. For them, nuclear weapons, if hosted, should provide the most credible threat of early use in any conflict, so as to deter even a conventional attack with the prospect of an endless chain of nuclear escalation. The most credible threat of early use would be with battlefield nuclear weapons. Whether they would actually be used or would confer any advantage to the user is something that probably can't and needn't be resolved in order to fulfill their purpose--to threaten most credibly the prospects for nuclear escalation with all of its attendant and awesome uncertainties.

The disposition and structure of those battlefield nuclear weapons in frontier states should be oriented toward the credibility of their use in the event of an attack, rather than toward their effectiveness if used. Hence, the decision on reduced-blast (or enhanced-radiation) weapons should not be based so much on considerations of their operational effectiveness as it should on concerns for the credibility of nuclear weapons being used in defense against a conventional attack in Europe. Forward placement of battlefield nuclear weapons might also increase the



credibility of their use in the event of an attack. The numbers of battlefield nuclear weapons need only be sufficient to make their use credible; they must have the appearance of plausible purpose to fulfill their deterrent threat.

At the same time, the frontier states that host nuclear weapons do not want their nuclear postures to be so threatening as to invite the very attack they hope most to deter. For that reason, they should probably avoid any theater-wide nuclear capabilities, so long as those capabilities can exist elsewhere in the Alliance and are clearly linked to their defense. That is, the credible threat of battlefield nuclear weapons carries with it the credible risk of escalation to theater nuclear weapons. If that escalation risk can be posed by theater nuclear weapons in the hands of the interior states, rather than the frontier states, so much the better for stability. In that way, theater nuclear weapons become associated with the threat of theater-wide conflict rather than the ambitions of a frontier state acting on its own.

In sum, the frontier states hosting nuclear weapons of other states, should, in their own interest, limit their TNF to battlefield nuclear weapons disposed and structured to maximize the credibility of their use in the event of an attack. Their biggest headache will be how to prevent the use of those weapons in the event that deterrence fails, whilst maintaining the credibility of the threat that will be used if deterrence fails.\*

## 2. The Interior States

For the interior states, a conventional attack by the Pact is a more remote threat to their sovereignty. It is not a threat to their survival unless they mismanage the defense of the frontier states or the negotiations to resolve the conflict. To a much greater extent than the frontier states, the interior states hold their destiny in their hands, because they have more time to think and negotiate before reacting militarily to an attack. The most immediate threat to their national interests is to their well-being. But failure to defend the frontier states could turn the interior states into new frontier states in a much more hostile world, with impending threats to their sovereignty and even their survival.

To help in the defense of the frontier states, the interior states, if hosting or armed with nuclear weapons, should have theater-wide nuclear forces so as to credibly threaten escalation to that level of conflict upon the condition that battlefield

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\* I am only half-joking when I suggest that the densely-developed frontier states may want to secretly throw away their permissive keys to those weapons! Turkey might want to use battlefield nuclear weapons if deterrence failed; but it is hard for me to imagine that the FRG or Greece would.

nuclear weapons are used in support of the frontier states. Again, these theater nuclear weapons need to be credible more than useful. They should be disposed and structured for the credibility of two threats; (1) to escalate a conflict within a frontier state from battlefield to theater nuclear weapons, and (2) to respond in kind to theater-wide nuclear attacks on military targets. For these purposes, mobile forces--for flexible disposition more than survival--would seem attractive. If they are sufficiently dispersed in the interior state so as to require an attacker to make a comprehensive strike upon the state, they will be able to provide the credible link for escalation to strategic nuclear conflict.

The interior states should have no need for battlefield nuclear weapons, except for those they may offer to be hosted in frontier states. Unless an interior state expects to be a battlefield before the first use of nuclear weapons, battlefield nuclear weapons confer no utility to an interior state, even as a threat.

However, nuclear-armed (as opposed to host) interior states do have a need for strategic nuclear forces in order to complete the threat of escalation for deterrence. For the interior states that merely host nuclear weapons, that essential threat of escalation to strategic nuclear conflict must come from the nuclear-armed states, either interior or overseas. The most credible threat of strategic conflict is countermilitary, but that may be too expensive a capability for an interior state to maintain. The next most credible threat is counterforce, but that may be even more costly. Thus, while somewhat less credible than countermilitary or counterforce threats, nuclear-armed interior states will generally have to settle for countervalue threats in their strategic forces as the only affordable posture--leaving the countermilitary and counterforce threats to their richer overseas cousins.

In sum, for the interior states, we have two possible TNF options: The interior host states should want theater-wide nuclear weapons, but should eschew battlefield nuclear weapons as irrelevant. And the nuclear-armed interior states should possess both theater nuclear weapons and strategic countervalue capabilities. They should also provide, if they can, battlefield nuclear weapons to the frontier host states; but their priorities probably ought to insure strategic nuclear countervalue capabilities, first, and theater-wide nuclear forces, second.

### 3. The Overseas States

Finally, there are the overseas states. Their national interests are least seriously or immediately threatened by a canonical Pact invasion. Despite the presence of their forces in frontier states, they remain the furthest removed from danger in time and consequences of all the Alliance states. Their interests are best served by completing the chain of threatened escalation to the threat of countervalue strategic nuclear conflict. To make that

final threat credible, in the hypothetical event of theater nuclear war, the overseas states may have to fill in the gap with even more credible threats of strategic nuclear conflict--with countermilitary and counterforce capabilities.

The sole nuclear-armed overseas state, being a superpower by circumstances beyond this simple analysis, thus carries the full burden of completing the continuous chain of credible escalatory threats. That state must provide capabilities for the full spectrum of strategic nuclear conflict--countermilitary, counterforce, and countervalue. While the threat of those capabilities is least credible in isolation, that state is also the most isolated from the threat: It is in that category of states whose vital interests are least threatened in the event of a Pact invasion. But the threat of those strategic nuclear capabilities is not at all incredible in the event of a Pact invasion that could--because of the nuclear postures of the frontier and interior states--credibly result in escalation to theater nuclear conflict.

In addition to those strategic nuclear capabilities, the sole nuclear-armed overseas state (being a superpower), should be able to afford supplying battlefield and theater nuclear weapons to any host state (frontier and interior, respectively) in the Alliance that might want them.

#### IV. IMPLICATIONS FOR TNF POLICIES

Where, then, does this abstract exercise in symbols for nations, objectives, and forces leave us? What does it suggest about logical options for NATO TNF in the real world of the 1980s?

For the FRG, Greece, and Turkey, it suggests a battlefield nuclear weapons posture, in concert with the U.S., but without any theater-wide or long-range weapons.

For Italy, the U.K., perhaps Belgium and the Netherlands, it suggests theater-wide or long-range nuclear forces, in concert with the U.S. France, on its own, of course, should also have theater-wide forces, but no battlefield nuclear weapons except with its forces in the FRG. Both the U.K. and France should also have strategic countervalue strike forces as independent deterrents, as a first priority for any nuclear-armed state.

For the U.S., it suggests a complete array of strategic nuclear capabilities, plus the provision of theater and battlefield nuclear weapons in concert with those countries cited above.

What is different about this from the situation being contemplated in current planning? The most important difference is that it suggests removing or not emplacing theater-wide nuclear weapons (QRA aircraft, GLCM, or Pershing II) in the FRG--or in Greece or

Turkey, for that matter. That conclusion, at least as it is applied to the FRG, appears to be contrary to the LRTNF decision of December 1979. But it also appears to be very close to the heart of the question of NATO TNF options for the 1980s; and, as such, it may serve us very well as a springboard for the discussion which this paper was intended to launch.

It also suggests that France and Britain are justified in looking after their strategic nuclear countervalue capabilities first, before theater-wide weapons. And that is a point that appears to be much in debate in Britain as it embarks upon the acquisition of the Trident for modernization of its Polaris force.

#### V. IMPLICATIONS FOR FORCES\*

What TNF forces would logically follow from this simple analysis and its policy implications? What types and numbers of weapons would go with the logical postures described here?

First, if nuclear forces have utility only in their threat of use and not in their actual use, then the types and numbers of those forces should be selected on the basis of the credibility of their threat and not, primarily, on their ability to fight or win a war. The distinction is important, for if they are selected on their ability to fight or win a war, then task (targeting) considerations dominate their selection. But, if they are selected on the credibility of the threat to use them and the prospect of further escalation if they are used, then they should be selected with the perspective of the attacker:

- o The probability that nuclear weapons will be used by the defender, if attacked;
- o The requirements of the attacker to counter or neutralize that threatened use; and
- o The risk of further escalation if the defender uses his nuclear weapons or loses them to the attacker.

These considerations put much more weight upon how nuclear weapons are deployed, the likelihood of their use, and the level of conflict their use implies, rather than their effectiveness in

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\* This section was not included in the original draft paper distributed at the Barnett Hill conference. After I outlined the above arguments at the conference, the Chairman, Christoph Bertram, asked me to extend my arguments in further discussion--to outline the logical forces that would result. The following paragraphs are a close approximation of what I went on to say about the implications for force sizes and types.

covering targets or accomplishing military objectives. To be sure, they cannot be so obviously ineffective as to be incredible; but credibility of threat and military effectiveness, while related, are not synonymous. Thus, in what follows, my proposal for TNF types and numbers concentrates on deployments rather than capabilities--deployments that would make credible both their use and the risks of further escalation.

# 1. Battlefield Forces

For battlefield forces, I would want weapons with sufficient range to reach targets having a direct effect on the battle area, but clearly not long enough to pose a credible threat to expand the area of conflict beyond the defense of the frontier state. I would want a diversity of types to avoid discovery of a fatal flaw--not in combat, but in the credibility of the threat to use them--such as the discovery of new defenses against them or of new limitations on their use. Having said that, three types of weapons come to mind:

- o Artillery or tube-launched weapons;
- o Short-ranged missiles (such as Honest John or Lance); and
- o VTOL aircraft (because of their obviously short range).

How much is enough? To pose a credible risk of escalation to theater-wide nuclear war, battlefield nuclear weapons need only pose the prospect of some substantial use. How many nuclear detonations are required, even on the battlefield, to pose a credible risk of escalation? It might be more than ten, but it is difficult to see why it would be more than a thousand. The detonation of a thousand nuclear weapons would be an unprecedented human trauma. My guess is that the certain prospect of several hundred nuclear detonations is all that battlefield nuclear weapons must threaten in order to pose the risk of further escalation. If they can do that, I assume that they needn't be designed to do any more.

But to be certain that there are sufficient battlefield weapons to pose that threatened consequence, even against deliberate efforts to prevent it, much more than 200 weapons would be required. My thinking leads to something like the following force for a frontier state:

- o 1000 artillery shells distributed amongst 20 locations with 50 shells each;
- o 200 short-range missiles distributed amongst 20 locations with 10 missiles each; and

- o 50 VTOL aircraft with four bombs each distributed amongst eight locations.\*

## 2. Theater Nuclear Forces

For theater-wide nuclear forces, I would want weapons with sufficient range to reach all targets in the theater, but clearly not long enough to pose a credible threat to non-theater targets or to expand the area of conflict beyond the theater. Again, I would want a diversity of types to avoid fatal flaws in the credibility of the threat to use them in the event of an attack. Three types of weapons appear suitable:

- o Medium-range ballistic missiles (<1,000 km);
- o Ground-launched cruise missiles; and
- o Fighter-bombers.\*\*

They should be provided with characteristics such that no target in a theater-wide conflict could be presumed safe from attack. They should be available in sufficient numbers to provide a confident prospect of hundreds of nuclear detonations in the theater if they are used. They should be deployed to confront an attacker with the necessity to use hundreds of nuclear weapons if he is to be successful in his attack on them. The prospect of their use, or their being the object of attack, should pose circumstances of destruction so great as to make deliberate

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\* I have said nothing about what any of these forces would be used for or what targets they would (or would not) cover. According to the logic outlined here, those considerations are secondary. I would propose to let the operational commanders develop plans for their most effective, credible use. Undoubtedly, there are some uses that could be conceived. If announcing those plans would make their threatened use more credible, I would do so. But I would also tell that operational commander not to call me for release authority--I will call him. If he complains that he doesn't have enough to cover all the targets he wants to, my only question would be whether or not his use of the force (or the enemy's efforts to destroy it) will result in several hundred nuclear detonations. If it won't, then the force is inadequate, by definition. It may need to be increased in size or redeployed to result in the confident prospect of several hundred nuclear detonations--in its use or in its demise. If it will do that, it is enough.

\*\* Note that I have not included submarine-launched ballistic or cruise missiles, because these weapons are not obviously limited to the theater by their deployment. Once deployed, even routinely from theater ports, they could be employed well outside the theater. For that reason, I consider SLBMs and SLCMs to be strategic (or global) weapons.

retaliatory attacks upon cities a credible subsequent threat. This thinking leads me to something like the following force for an interior state:

- o 100 MRBMs distributed amongst seven locations with about 15 missiles each;
- o 200 GLCMs, distributed amongst eight units of about 24 missiles each, deployed at any of 24 possible locations (three possible sites for each unit); and
- o 50 fighter-bombers with four bombs each distributed amongst eight locations.

### 3. Strategic Forces

For strategic or global nuclear forces, the first priority for the nuclear-armed states should be the acquisition of capabilities for the threat of societal destruction. Those can probably be most confidently secured today with SLBMs. Interior states should have enough capability for societal destruction to make any conflict with them present the attacker with the prospect of utter disaster. I would think that the ability to destroy about 50 cities would be sufficient. That translates to about two boatloads of Polaris or one boatload of Trident missiles. Assuming that twice that many are required to keep the requisite numbers secure at sea, nuclear-armed interior states should have minimum strategic forces of four to five Polaris boats or two to three Trident boats.

If the interior states can afford countermilitary or counterforce strategic capabilities in addition to their minimum countervalue capabilities, those could be invested in longer-range land-based missiles or bombers. As I have said earlier, I think such capabilities may be a luxury that only the superpowers can afford. The importance of such capabilities is mainly in closing the credibility gap between the threats of theater nuclear forces and strategic countervalue forces. The closing of that gap is most important for the overseas nuclear-armed states because their territory is not as likely as an interior state to be struck by nuclear weapons in a theater nuclear conflict.

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